Date: Fri, 22 Oct 93 04:30:28 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #86
To: Ham-Ant

Ham-Ant Digest Fri, 22 Oct 93 Volume 93 : Issue 86

Today's Topics:

2m/440 dual band beam project
Anyone seen this?
Beverage antennas
Butternut HF6VX Question (2 msgs)
j-pole question
NEC
Need ideas for quick and easy 160M antenna (asap)
Proper J-Pole Grounding
SWR measurements are too good! (6 msgs)
WHAT IS J_POLE ?

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

Date: 21 Oct 1993 06:41:30 GMT
From: concert!samba.oit.unc.edu!not-for-mail@decwrl.dec.com
Subject: 2m/440 dual band beam project
To: ham-ant@ucsd.edu

We, VTARA, are looking for a plans for a 2m/440 beam to mount above our
existing 10/15/20m tri-bander. We were thinking of something with a boom
length of less than 15'. Construction is planned for Thanksgiving break.
(material sources would also be helpful)

please reply to tsayles@clark.ce.vt.edu

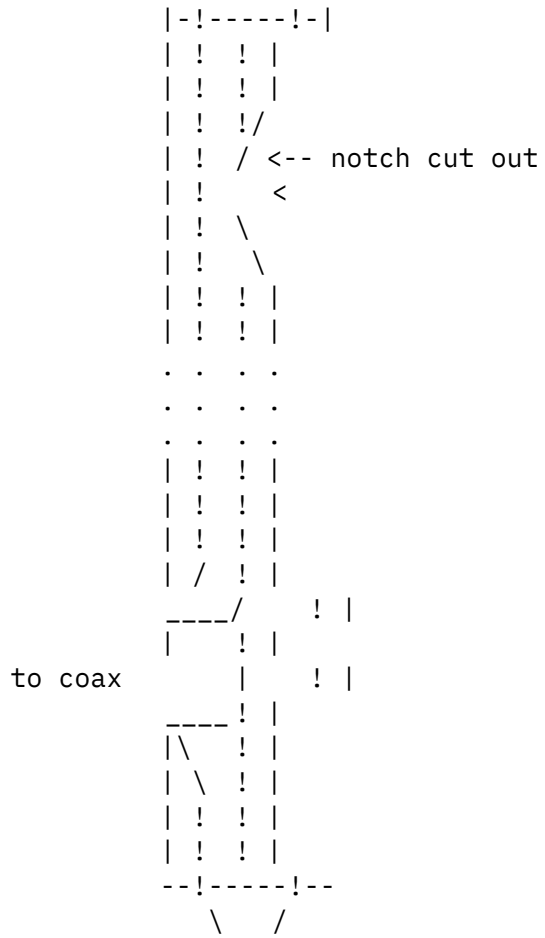
Thanks in advance

VTARA, K4KDJ
--

Date: 22 Oct 1993 00:05:11 GMT
From: usenet.coe.montana.edu!netnews.nwnet.net!news.u.washington.edu!
cac.washington.edu!jerryh@decwrl.dec.com
Subject: Anyone seen this?
To: ham-ant@ucsd.edu

I recently saw designs for this simple antenna but can't remember where. Can anyone help me out? It was made for monitoring 46MHz and was constructed using TW=V antenna wire.

Kind of looked like this:



solder ends together

I don't know any of the dimensions!!!

Date: 21 Oct 1993 17:17:11 GMT
From: swrinde!cs.utexas.edu!math.ohio-state.edu!howland.reston.ans.net!noc.near.net!sunfish.hi.com!brainiac.hi.com!user@network.ucsd.edu
Subject: Beverage antennas
To: ham-ant@ucsd.edu

I'm curious about peoples experiences with Beverage antennas on shortwave.

If you use a Beverage antenna, how long is it? How high is it?

What is the highest frequency that seems to show any directivity?

My 175 meter Beverage at 3 meters height shows good directivity on MW and low tropical-band frequencies, up to about 3 or 4 MHz. I haven't yet read Mizek's book on Beverages, but I understand that he or some others have had some luck with Beverages up to 6 or 7 MHz.

Do you use a matching transformer? If so, what kind?
I'm using a design similar to the one by (Devoldere?) in the ARRL book "Low-band DXing". It is a transmission-line "un-un" (unbalanced-to-unbalanced) transformer. I modified the design by using additional turns to bring the low-frequency cutoff point down to 500 kHz. It seems to work fine, but I don't yet have access to the lab equipment I need to verify its performance.

Do you use a terminating resistor? What value?
Does the termination seem to make any difference at the higher frequencies?

Did you adjust the termination value based on F/B ratio, or some other criteria, or just take pot-luck?

I'm using a remote-switchable 470-ohm terminator. The terminator gives 20dB nulls off the back of the Beverage on MW (WBZ-1030), but doesn't seem to do much on the higher frequencies. Switching in the terminator doesn't seem to show any nulling of the BBC Antigua outlet on 5975 kHz, although it is within 15 degrees of the back-bearing of the Beverage. Has anyone had good results in the 3 to 6 MHz range?

I'm currently improving my antenna switching arrangement, as I suspect
there may be crosstalk that is degrading the directivity of the Beverages.

Thanks,
-Steve

Steve Byan
Hitachi Computer Products (America), Inc.
1601 Trapelo Road
Waltham, MA 02154

internet: steve@hicomb.hi.com
phone: (617) 890-0444
FAX: (617) 890-4998

Date: 21 Oct 93 15:32:29 GMT
From: ogicse!uwm.edu!vixen.cso.uiuc.edu!uxa.cso.uiuc.edu!rtclay@network.ucsd.edu
Subject: Butternut HF6VX Question
To: ham-ant@ucsd.edu

In article <cowart.750955748@neptune> cowart@convex.com (Michael Cowart) writes:
>Mike Ellerson <mellerso@uga.cc.uga.edu> writes:
>
>>Over the weekend, I installed a Butternut HF6VX for my HF base station.
>>After an afternoon of deciphering the instructions, I finally got the
>>thing up. I ground mounted it using 12 - 25 ft. radials. The next
>>afternoon I spent tuning the antenna up. It tuned very well (under 2:1)
>>on the bands I wanted to use such as 80m, 40m, 15m, & 10m. I got to
>>noticing that the reception was excelent on all bands except for 10m. I
>>also have a 10m dipole up about 25 feet. I noticed that when I switched
>>to the dipole , I could hear signals that I could not hear on the
>>Butternut and others were much stronger. When transmitting, my signal
>>reports were about 2db down versus using the dipole. I did talk to
>>another fellow using a HF6V in California that was putting in a 59 here
>>in Northen Georgia. He had his mounted on the   roof with 4 - 40ft.
>>radials. So, my question is, does the HF6VX need this extra height to
>>work well on 10M , or did I goof in my installation ? Yes, the SWR on 10M
>>checks less than 2:1 and the feedline is in good shape. Any suggestions
>>would be greatly appreciated.
>
>You did nothing wrong installing your Bnut. It just doesn't perform well
>on 10 meters. I have one ground mounted with 16 60-foot radials. It
>works great on all bands except 10. I think a coat hanger could beat it!
>I have a friend who mounted his on the roof and he gets much better results
>on 10 than I. ....for what its worth.
>
I agree about ground mounted HF6V's. I have used a roof-mounted HF6V for the
last 7 years. It seems to perform well on 10m. However, I have NEVER been able
to get the SWR under 2.5:1 on 28 Mhz. I have also never been able to get a low

SWR on the low end of the 20m cw band. Is there some trick I'm missing to get the antenna tuned up on these frequencies when it is mounted above ground?

73,

--
R. Torsten Clay, N4OGW   r-clay@uiuc.edu or n4ogw@uiuc.edu

Date: Thu, 21 Oct 1993 17:25:45 GMT
From: spsgate!mogate!newsgate!news@uunet.uu.net
Subject: Butternut HF6VX Question
To: ham-ant@ucsd.edu

In article <2a6a2d$7ie@vixen.cso.uiuc.edu> rtclay@uxa.cso.uiuc.edu (clay rudolf) writes:
> ...
> I agree about ground mounted HF6V's. I have used a roof-mounted HF6V for the
> last 7 years. It seems to perform well on 10m. However, I have NEVER been able
> to get the SWR under 2.5:1 on 28 Mhz. I have also never been able to get a low
> SWR on the low end of the 20m cw band. Is there some trick I'm missing to get
> the antenna tuned up on these frequencies when it is mounted above ground?
> ...
I have found that with roof mounted verticals (Butternut and others) that the length of the radials can have quite an effect on the tuning of the antenna. Much moreso than if it's ground mounted. Have you tried fiddling with the radials? That's one reason I switched from a BN to an R5...no radials to dink with. The final straw, tho, was when I tripped over a radial wire and nearly fell off the roof. The R5 is a much cleaner installation and (for me) works every bit as well as the HF6VX it replaced. Your mileage may vary.

73...   Mark   AA7TA

Date: Thu, 21 Oct 1993 16:17:00 -0500
From: blkcat!news@uunet.uu.net
Subject: j-pole question
To: ham-ant@ucsd.edu

I am looking for a basic question relative to a j-pole. The plans that I have call for using a 300 ohm twin lead and connect it to RG58. Isn't this going to be an impedance missmatch?

Date: 21 Oct 1993 17:16:30 GMT
From: olivea!inews.intel.com!ilx018-bb.intel.com!ilx049!dbraun@uunet.uu.net
Subject: NEC
To: ham-ant@ucsd.edu

While we're on the subject, here's a NEC question:

I model a simple dipole with, say seven segments,
and get its resistance and reactance around its resonant
frequency. With seven segments I get s smooth transition
from capacitive reactance below the resonant frequency to inductive
reactance above the resonant frequency. So, far, so good.
But if I model the antenna with say 33 segments, I get a
"ripple effect" where the reactance varies in an up-and-down fashion,
e.g.:

Frequency	Reachance
14.0	-50
14.05	-10
14.1	-20
14.15	-5
14.2	-15
14.25	10
14.3	-2
14.35	25

Is this normal? Could my version ov NEC (compiled on RS6000)
be having numerical problems?

--

Doug Braun Intel Israel, Ltd. M/S: IDC1-41
Tel: 011-972-4-655069 dbraun@inside.intel.com

Date: Thu, 21 Oct 1993 04:49:00 GMT
From: swrinde!cs.utexas.edu!math.ohio-state.edu!sol.ctr.columbia.edu!news.kei.com!
ub!acsu.buffalo.edu!ubvms.cc.buffalo.edu!v111qheg@network.ucsd.edu
Subject: Need ideas for quick and easy 160M antenna (asap)
To: ham-ant@ucsd.edu

Hi all,

Here's the plan: I need a quick and east antenna for 160M for the CQWW contest next weekend. Give me your ideas!

Ground rules:

Must not be a loaded tower design. My tower is but 40 foot and attached to house thus no ability to string radials from it and it is not insulated from the earth.

Must fit a 100X200 foot lot.

No components easily burned up by RF and high SWR. Thus all capacitors, matching sections and dividers must be made of coax. No components.

Must have a feedpoint impedance of about 50 ohms or otherwise 200 ohms for a balun fed feed. Feedline will be RG213.

Highest support will be the 38' level of my tower and all supports will be trees etc.

Needs to be simple. Construction and erection must be done in a day with readily available parts.

thanks for all input!

73
Peter KB2NMV/VP9

Date: Wed, 20 Oct 1993 17:03:35 GMT
From: dog.ee.lbl.gov!agate!spool.mu.edu!nigel.msen.com!ilium!rcsuna.gmr.com!kocrsv01!c2xjcb@network.ucsd.edu
Subject: Proper J-Pole Grounding
To: ham-ant@ucsd.edu

In article <750765783.AA00167@Chigate.chigate.com>, Don.Merz@f747.n115.z1.Chigate.chigate.com (Don Merz) writes:
> bankrupt yourself in the meantime. Additionally, I assert that
> shield
> braid stripped off old, useless coax is a reasonable compromise.
>

Why even bother to strip it out of the coax? Why not just leave it "as is"? I've used old RG-58 and RG-59 coax as "ground straps" simply by soldering a spade-lug at each end, stripping off about 1" at the

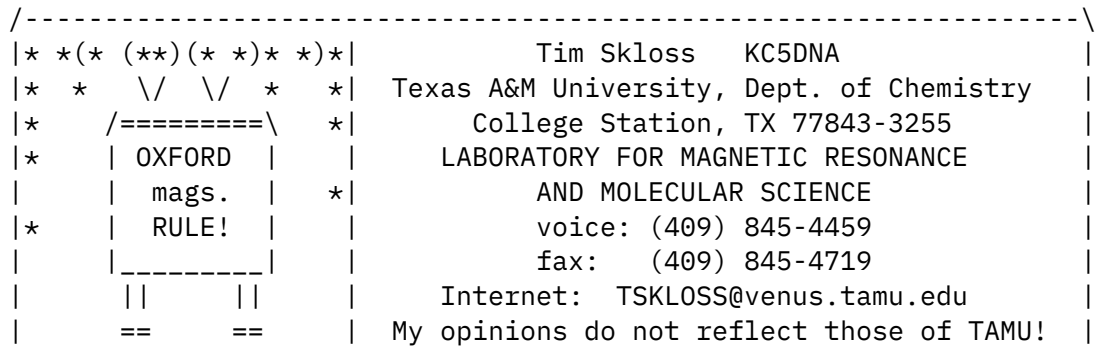
ends and connecting the center conductor to the braid. The center
conductor adds to the straps' DC current carrying capabilty; the
surface area of a round vs flat piece of shield should be about the
same, so the AC characteristics shouldn't change much between a fully
jacketed round piece and a de-jacketed flattened piece.
--
James C. Bach   Ph: (317)-451-0455   The views & opinions expressed
Advanced Project Engr.   GM-NET: 8-322-0455   herein are mine alone, and are
Powertrain Strategy Grp   Amateur Radio: WY9F   NOT endorsed, sponsored, nor
Delco Electronics Corp.   Just say NO to UNIX!   encouraged by DE or GM.

Date: 21 Oct 93 13:50:00 GMT
From: ogicse!uwm.edu!cs.utexas.edu!TAMUTS.TAMU.EDU!zeus.tamu.edu!
tskloss@network.ucsd.edu
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

In article <1993Oct20.181229.719@TorreyPinesCA.ncr.com>,
kevin@TorreyPinesCA.ncr.com (Kevin Sanders) writes...
>GM GA GE all,
>
>My question is, where is my power going? Where is the SWR dip I expected to
>see? The antenna appears to work OK, so should I care? I can't believe the
>antenna is so wide-band that I can't find an SWR over 1.1:1 anywhere in the
>220 band, no matter where the shorting bar is or whether I use one.
>

The power is going into heating the 100 ft of coax. If the meter is at
the end of the coax opposite the antenna, then the refleced power has to
traverse back through the 100 ft of coax to be detected. At 220 MHz, you
shouldn't even be buying RG-58, RG-8 is a minimum and something like
Belden 9913 is preferred.

If your power meter is working properly, the line loss must be your
undoing. If not, where can I get such an antenna!!!



\--/
"The brain is much like a computer;
therefore dumb people do not exist, just people running DOS!"
PowerPC - The ULTIMATE personal computing machine.
-tim

Date: 21 Oct 93 17:52:56 GMT
From: sdd.hp.com!col.hp.com!fc.hp.com!goris@hplabs.hpl.hp.com
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

Andy Goris (goris@fc.hp.com) wrote:

Ah Ooops, ...I misread your configuration. If this is it:

```
   XMTR-------------------------SWR------Antenna
            100 ft.              2 ft.
```

Then, the 100 ft. of cable WILL NOT MATTER. What is the exact length
of the 2-ft. section, anyway.. in inches. Is this .66 velocity factor
cable? Also, I assume the antenna is up in the air away from other things..
At least 4 or 5 feet up? Try and get the SWR meter out of the field of
the antenna, although I've never had a problem with this on 144 MHz.

Andy Goris
AA0CM

Date: 21 Oct 93 19:07:51 GMT
From: ogicse!uwm.edu!ginews!don@network.ucsd.edu
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

In article <CF9910.EEA@cunews.carleton.ca> im@hydra.CARLETON.CA (Ian McEachern
VE3PFH) writes:
>I would bet that it has to do with the 2 feet being exactly at a null
>in the standing wave. If that is the case then having a short or open
>would not change the reading. Try another length of coax.

To my knowledge, there is no such thing as a null in a standing
wave. The SWR of a lossless transmission line is the same anywhere
on the line. On a lossy line, the SWR will vary somewhat, but not
go to a null.

Donald D. Woelz, K9GR Office Phone: 414-644-8700

   GENROCO, Inc.   K9GR @WB9TYT.#MKE.WI.USA.NOAM
   205 Kettle Moraine Drive North   k9gr@k9gr.ampr.org [44.92.1.48]
   Slinger, WI 53086   U.S.A.   don@genroco.com

Date: Thu, 21 Oct 1993 13:36:13 GMT
From: sdd.hp.com!swrinde!elroy.jpl.nasa.gov!usc!howland.reston.ans.net!
spool.mu.edu!bloom-beacon.mit.edu!news.kei.com!das.wang.com!wang!
dbushong@network.ucsd.edu
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

goris@fc.hp.com (Andy Goris) writes:

>Kevin Sanders (kevin@TorreyPinesCA.ncr.com) wrote:

>:I am building an 8-element yagi-uda antenna for 220 MHz. The antenna itself
>:is complete, now I'm working on the feed. I'm using a standard gamma match.
>:The elements are solid aluminum stock, about 3/16" diameter. I used a piece
>:of copper wire for the matching section, and have a sliding shorting bar for
>:tuning.

>:I connected the meter with a 2-foot coax jumper to the antenna for the
>:tests.

>:[...]

>Kevin...you just answered your own question. The lossy coax IS the problem,
>presuming that your SWR meter is at the radio. If 35 Watts at the Xmtr

Two feet of coax is a problem?

--
Dave Bushong, Wang Laboratories, Inc.   Amateur Radio Callsign KZ1O
Project Leader, Recognition products   kz1o@n0ary.#noca.ca.na
Internet: dbushong@wang.com   ARRL VE   //   W5YI VE

Date: 21 Oct 93 17:34:31 GMT
From: hp-cv!hp-pcd!hpcvsnz!tomb@hplabs.hpl.hp.com
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

Andy Goris (goris@fc.hp.com) wrote:
: Kevin Sanders (kevin@TorreyPinesCA.ncr.com) wrote:

(Kevin's antenna description deleted)
: :I connected the meter with a 2-foot coax jumper to the antenna for the
: :tests.

: :Problem is, my SWR measurements are too good (almost unmeasurable reverse
: :pwr).
: :More troublesome is the fact that the position of the shorting bar makes
: :almost no difference in the readings...*even removing the shorting bar*
: :makes very little difference.

: :My question is, where is my power going? Where is the SWR dip I expected to
: :see? The antenna appears to work OK, so should I care? I can't believe the
: :antenna is so wide-band that I can't find an SWR over 1.1:1 anywhere in the
: :220 band, no matter where the shorting bar is or whether I use one.

: :Oh, if it makes any difference (I don't think it should), I'm using 100 ft
: :of RG-58 coax between the meter and the transceiver. Lossy as heck I know,
: :(35 watts out becomes 5 watts at the antenna!) but this is just for testing.

: Kevin...you just answered your own question. The lossy coax IS the problem,
: presuming that your SWR meter is at the radio. If 35 Watts at the Xmtr
: becomes 5 watts at the antenna, and you had infinite:1 SWR at the antenna,
: all of the energy at the antenna (only 5 watts) would head back to the
: transmitter, and get attenuated down to .71 W reflected power by the time
: it got back to the transmitter. In this case I calculate you would get 1.3:1
: SWR. And thats with a short or open at the antenna end! Just about
: anything else will absorb some power, and lower your SWR. Your results
: exactly match theory. Disconnect your antenna entirely and see if you get
: 1.3:1 SWR.

Ummm-- but the meter is only a 2-foot length of coax from the antenna. So,
that doesn't explain things. But maybe some tests are in order.
Disconnect the coax at the antenna and measure the SWR: it should be quite
high. Short the coax (at the end that normally connects to the antenna),
and the SWR should be high. Connect a matched load (50 ohms?) to the
coax, and the SWR should read 1:1. For all these tests, make sure
everything else is just like when the antenna is connected. You could even
try some load with a known mismatch and see if you get the expected SWR with
it. If all that checks out, it's a bit of a puzzle. One thing to note:
SWR meters typically get nonlinear at low powers, and a low SWR represents
very little returned power. Typically they indicate less power than is
actually there, when they get into that nonlinear region. That's why testing
with a small, known mismatch is important.

Date: Thu, 21 Oct 1993 16:12:36 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!usc!

cs.utexas.edu!utnut!torn!nott!cunews!news@network.ucsd.edu
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

Kevin says:
>Oh, if it makes any difference (I don't think it should), I'm using 100 ft
>of RG-58 coax between the meter and the transceiver. Lossy as heck I know,
                            ^^^^^^
No this makes no difference at all (unless you're usinga 100 Watt element).

>(35 watts out becomes 5 watts at the antenna!) but this is just for testing.

I would bet that it has to do with the 2 feet being exactly at a null
in the standing wave. If that is the case then having a short or open
would not change the reading. Try another length of coax.

Second, what kind of meter is it? If Bird etc. using the 220 element
then you can be sure (fairly sure?) of true readings. If a SWR meter
for 2m or 440 then funny things could happen.

im
--
Ian A. McEachern, VE3PFH | This space for rent.
Packet Working Group, Ottawa A.R.C. |
im@hydra.carleton.ca |
ian@ve3pfh.ampr.org |

Date: 21 Oct 93 14:11:53 GMT
From: puc.cl!tolten.puc.cl!equero@uunet.uu.net
Subject: WHAT IS J_POLE ?
To: ham-ant@ucsd.edu

The subject said all.

Thanks: equero@tolten.puc.cl

End of Ham-Ant Digest V93 #86
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